

IN THE CLAIMS

1. A pseudolite for a positioning system (PS), said positioning system having several orbiting PS satellites transmitting respective PS signals, each one of said PS signals having an identification for a one of said PS satellites transmitting said one of said PS signals and location-determination information corresponding to a location-in-space for said one of said PS satellites transmitting said one of said PS signals, the pseudolite comprising:

an availability calculator for determining unreceivable ones of said PS satellites;

an identification selector coupled to the availability calculator for selecting a particular one of said identifications corresponding to a particular one of said unreceivable PS satellites; and

a transmitter coupled to the PS satellite selector for transmitting a pseudo PS signal having said particular identification and location-determination information corresponding to a geographical location of the pseudolite.

2. The pseudolite of claim 1, wherein:

the availability calculator includes a visibility calculator for determining out-of-view ones of said PS satellites and designating said out-of-view PS satellites as said unreceivable PS satellites.

3. The pseudolite of claim 2, wherein:

said visibility calculator is for determining said out-of-view PS satellites based upon PS satellite orbital parameter information and time.

4. The pseudolite of claim 2, wherein:

said visibility calculator is for determining said out-of-view PS satellites based upon location information and height of a local obstruction.

5 5. The pseudolite of claim 1, wherein:

the availability calculator includes an operational identifier for determining non-operational ones of said PS satellites and designating said non-operational PS satellites as said unreceivable PS satellites.

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6. The pseudolite of claim 1, wherein:

said PS satellites include GPS satellites for transmitting GPS signals as said PS signals having said identification in a form of a distinguishable pseudorandom spreading code.

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7. The pseudolite of claim 1, wherein:

said PS satellites include global orbiting navigation system (GLONASS) satellites for transmitting GLONASS signals as said PS signals having said identification in a form of a distinguishable carrier frequency.

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8. The pseudolite of claim 1, further comprising:

a pseudolite PS receiver for receiving signal energy for received ones of said PS signals having corresponding received ones of said identifications; and a pseudolite detector for preventing the identification selector from selecting any one of said received identifications as said particular identification.

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9. The pseudolite of claim 1, wherein:

said pseudo PS signal is for reception by a PS navigation receiver for determining at least one of (i) location and (ii) time.

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10. A method in a pseudolite for a positioning system (PS),
said positioning system having several orbiting PS
satellites transmitting respective PS signals, each one of
said PS signals having an identification for a one of said
5 PS satellites transmitting said one of said PS signals and
location-determination information corresponding to a
location-in-space for said one of said PS satellites
transmitting said one of said PS signals, the method
comprising steps of:

10 determining unreceivable ones of said PS
satellites;

selecting a particular one of said identifications
corresponding to a particular one of said unreceivable PS
satellites; and

15 transmitting a pseudo PS signal having said
particular identification and location-determination
information corresponding to a geographical location of the
pseudolite.

20 11. The method of claim 10, wherein:

the step of determining said unreceivable PS
satellites includes steps of: determining out-of-view ones
of said PS satellites; and designating said out-of-view PS
satellites as said unreceivable PS satellites.

25 12. The method of claim 11, wherein:

the step of determining said out-of-view PS
satellites includes determining said out-of-view PS
satellites based upon PS satellite orbital parameter
30 information and time.

13. The method of claim 11, wherein:

the step of determining said out-of-view PS
satellites determining said out-of-view PS satellites based
35 upon location and height of a local obstruction.

14. The method of claim 10, wherein:

the step of determining said unreceivable PS satellites includes steps of: determining non-operational ones of said PS satellites; and designating said non-operational PS satellites as said unreceivable PS satellites.

15. The method of claim 10, wherein:

said PS satellites include GPS satellites for transmitting GPS signals as said PS signals having said identification in a form of a distinguishable pseudorandom spreading code.

16. The method of claim 10, wherein:

said PS satellites include global orbiting navigation system (GLONASS) satellites for transmitting GLONASS signals as said PS signals having said identification in a form of a distinguishable carrier frequency.

17. The method of claim 10, further comprising steps of:

receiving signal energy for received ones of said PS signals having corresponding received ones of said identifications; and

the step of selecting particular identification includes selecting said particular identification not corresponding to any one of said received identifications.

18. The method of claim 10, wherein:

said pseudo PS signal is for reception by a PS navigation receiver for determining at least one of (i) location and (ii) time.